GATE SCHEDULE

Jan 5: ***C Programming*** - Basics & Syntax.

Jan 6: ***Data Structures 1***- Recursion. Arrays, stacks, queues, linked lists.

Jan 7: ***Data Structures 2*** - Trees, binary search trees, binary heaps, graphs.

Jan 8: Algorithms 1 - Searching, sorting, hashing. Asymptotic worst case time and space complexity.

Jan 9: Algorithms 2 - Algorithm design techniques: greedy, dynamic programming, divide‑and‑conquer. Graph traversals, minimum spanning trees, shortest paths.

Jan 10: DBMS 1 - ER‑model. Relational model: relational algebra, tuple calculus, SQL

Jan 11: DBMS 2 - Integrity constraints, normal forms. File organization, indexing. Transactions and concurrency control.

Jan 12: Operating Systems 1 - System calls, processes, threads, inter‑process communication, concurrency and synchronization.

Jan 13: Operating Systems 2 - Deadlock. CPU and I/O scheduling

Jan 14: Operating Systems 3 - Memory management and virtual memory. File systems.

Jan 15: Computer Networks 1 - Concept of layering: OSI and TCP/IP Protocol Stacks; Basics of packet, circuit and virtual circuit switching; Data link layer: framing, error detection, Medium Access Control, Ethernet bridging.

Jan 16: Computer Networks 2 - Routing protocols: shortest path, flooding, distance vector and link state routing; Fragmentation and IP addressing, IPv4, CIDR notation, Basics of IP support protocols (ARP, DHCP, ICMP), Network Address Translation (NAT)

Jan 17: Computer Networks 3 - Transport layer: flow control and congestion control, UDP, TCP, sockets; Application layer protocols: DNS, SMTP, HTTP, FTP, Email.

Jan 18: General Aptitude 1- Numerical Ability (Time & Work, Permutations, Probability Basics)

Jan 19: General Aptitude 2 - Spatial Aptitude, Data Interpretation, Verbal Logic

Jan 20: Linear Algebra & Calculus - Matrices, determinants, system of linear equations, eigenvalues and eigenvectors, LU decomposition. Limits, continuity and differentiability, Maxima and minima, Mean value theorem, Integration.

Jan 21: Probability & Statistics - Random variables, Uniform, normal, exponential, Poisson and binomial distributions. Mean, median, mode and standard deviation. Conditional probability and Bayes theorem.

Jan 22: Discrete Math - Propositional and first order logic. Sets, relations, functions, partial orders and lattices. Monoids, Groups. Graphs: connectivity, matching, colouring. Combinatorics: counting, recurrence relations, generating functions.

Jan 23: Theory of Computation 1 - Regular expressions and finite automata. Context-free grammars and push-down automata.

Jan 24: Theory of Computation 2 - Regular and context-free languages, pumping lemma. Turing machines and undecidability.

Jan 25: Compiler 1 - Lexical analysis, parsing, syntax-directed translation. Runtime environments. Intermediate code generation.

Jan 26: Compiler 2 - Local optimization, Data flow analyses: constant propagation, liveness analysis, common sub expression elimination.

Jan 27: Digital Logic - Boolean algebra. Combinational and sequential circuits. Minimization. Number representations and computer arithmetic (fixed and floating point).

Jan 28: COA 1 - Machine instructions and addressing modes. ALU, data‑path and control unit. Instruction pipelining, pipeline hazards.

Jan 29: COA 2 - Memory hierarchy: cache, main memory and secondary storage; I/O interface (interrupt and DMA mode).

Jan 30: Revision - Math & Aptitude + *GATE 2025 Paper*

Jan 31: Revision - C & DS + *GATE 2024 Paper*

Feb 1: Revision - Algo & DBMS + *GATE 2023 Paper*

Feb 2: Revision - OS & CN + *GATE 2022 Paper*

Feb 3: Revision - TOC & Compiler + *GATE 2021 Paper*

Feb 4: Revision - Digital & COA + *Full Mock Test 1*

Feb 5:Revision - C & DS & Algo & DBMS + *Full Mock Test 2*

Feb 6:Revision - Math & Aptitude & OS & CN + *Full Mock Test 3*

Feb 7: Revision - TOC & Compiler & Digital & COA + *Full Mock Test 4*

Feb 8: Exam Day

Feb 9: Stats & ML Math - Joint Probability: Marginal, Conditional, and Joint distributions; Advanced Stats: Covariance, Correlation; Advanced Distributions: t-distribution, chi-squared distribution; Hypothesis Testing: Confidence interval, z-test, t-test, chi-squared test; Central Limit Theorem; Vector Spaces: Subspaces, Linear Dependence/Independence; Special Matrices: Projection matrix, Orthogonal matrix, Idempotent matrix, Partition matrix; Quadratic Forms; Decompositions: Singular Value Decomposition (SVD); Geometry: Projections; Optimization: Optimization involving a single variable related to loss functions; Taylor's Series.

Feb 10: AI Search & Logic - Search: informed, uninformed, adversarial; logic, propositional, predicate; reasoning under uncertainty topics — conditional independence representation, exact inference through variable elimination, and approximate inference through sampling.

Feb 11: Supervised Learning 1 - Regression and classification problems, simple linear regression, multiple linear regression, ridge regression, logistic regression, k-nearest neighbour, naive Bayes classifier, linear discriminant analysis

Feb 12: Supervised Learning 2 - Support vector machine, decision trees, bias-variance trade-off, cross-validation methods such as leave-one-out (LOO) cross-validation, k-folds cross-validation, multi-layer perceptron, feed-forward neural network

Feb 13: Unsupervised Learning - Clustering algorithms, k-means/k-medoid, hierarchical clustering, top-down, bottom-up: single-linkage, multiple-linkage, dimensionality reduction, principal component analysis.

Feb 14: Python - Programming in Python + *Revision*

Feb 15: Exam Day